CLAIMS

- 1. A solid state laser, comprising:
- a laser resonator including an output mirror, a laser crystal containing rare earth ions and at least one reflecting mirror, said output mirror, laser crystal and reflecting mirror being arranged along an optical axis,
 - a laser diode for emitting pumping light;
 - a pumping optical system for focusing pumping light emitted from said laser diode onto said laser resonator coaxially with said optical axis;
- wherein said laser crystal comprises a plurality of individual laser crystals arranged along said optical axis, said individual laser crystals being each made of a material having a composition expressed by a same chemical formula and having progressive higher concentrations of said rare earth ions toward said output mirror.
- 15 2. A solid state laser according to claim 1, wherein said individual laser crystals are disposed in close mutual contact.
 - 3. A solid state laser according to claim 1, wherein said individual laser crystals are integrally bonded to each other.

20

30

- 4. A solid state laser according to claim 1, wherein said individual laser crystals are spaced from each other by a gap substantially smaller than a length of a shortest one of said individual laser crystals.
- 5. A solid state laser according to claim 1, wherein said laser crystal is provided with a heat sink on side faces thereof for removal of heat.
 - 6. A solid state laser according to claim 1, wherein said individual laser crystals are made of a material selected from a group consisting of YVO₄, Y₃Al₅O₁₂ (YAG), LiYF₄ (YLF) and GdVO₄.
 - 7. A solid state laser according to claim 1, wherein said rare earth ions consist of neodymium ions.